

Sigl et al.

S/N: 10/604,252

REMARKS

Claims 1-25 are pending in the present application. In the Office Action mailed March 16, 2005, the Examiner rejected claim 18 under 35 U.S.C. 112, second paragraph, as being indefinite. The Examiner next rejected claims 1-3 under 35 U.S.C. §103(a) as being unpatentable over Buller et al. (USP 4,978,638) in view of Shih (USP 6,396,693). Claims 4-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Earl et al. (USP 5,304,735) in view of Shih.

The Examiner rejected claim 18 under 35 U.S.C. §112, second paragraph as being indefinite stating that "claim 18 is vague or indefinite since the surface is two dimensional by definition, therefore cannot have a thickness." Applicant has amended claim 12, from which claim 18 depends, to clarify that which is called for therein. As amended, claim 12 calls for, in part, a heat sink having a pair of external portions. Claim 18 has been amended to further define the external portions as generally thicker than a plurality of fins of the heat sink. Accordingly, Applicant requests that the rejection of claim 18 as vague or indefinite be withdrawn.

The Examiner rejected claims 1-3 under 35 U.S.C. §103(a) over Buller et al. in view of Shih. Applicant has amended claim 1 to call for an extruded heat sink having a cavity between adjacent fins of a plurality of fins and wherein the cavity extends from a body to a tip of the adjacent fins. Claim 1 further calls for a space formed between each of a laterally facing exterior portion and a neighboring fin and wherein the space extends from proximate an elongated ridge to a tip of the neighboring fin. Claim 12 further defines the space as having a depth less than a depth of the cavity. As shown in Fig. 1, the space between lateral external surface 52 and the neighboring fin or the most adjacent fin of the plurality of fins 52, has a depth that is less than a depth of a cavity formed between adjacent fins of the plurality of fins 56.

As shown in Fig. 4 of Buller et al., a uniform cavity is formed between each set of adjacent fins of the heat sink (36). As such, Buller et al. does not teach or suggest a heat sink having a space formed between an exterior fin and a neighboring fin and having a depth less than a depth of a cavity formed between adjacent interior fins. As shown in Fig. 3 of Shih, a cavity is formed between each of the upright fins (31) and the exterior fins of heat sink (3). Each cavity formed between any of the adjacent fins of heat sink (3) has a uniform depth. The cavities must have a uniform depth to receive the respective fins of top heat sink unit (2) therebetween. As such, that which is called for in claim 1 is not taught, suggested, or disclosed by the art of record. Accordingly, claim 1, and those claims that depend therefrom, are believed to be patentably distinct over the art of record.

Sigl et al.

S/N: 10/604,252

The Examiner rejected claim 4-11 under 35 U.S.C. §103(a) over Earl et al. in view of Shih. Applicant has amended claim 4 to call for, in part, a heat sink having a plurality of fins extending from the first side of the base and including a first fin, a number of intermediate fins, and a last fin. Claim 4 further calls for a U-shaped cavity formed between adjacent fins of the number of intermediate fins and a non-U-shaped cavity formed between the first fin and a neighboring fin and another non-U-shaped cavity formed between the last fin and a neighboring fin. As the Examiner is probably well aware, "[i]f [the] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP §2143.01. As previously argued with respect to claim 1, the cavities formed between adjacent fins of the heat sink (3) of Shih must be uniform to allow heat sink (2) to be engaged therewith. That is, combining the heat sink of Shih with a heat sink having the claimed cavity construction would prevent the connection of heat sink (2) with heat sink (3) thereby rendering Shih inoperable for its intended purpose, i.e. connecting two heat sinks together. Therefore, Applicant believes claim 4, and those claims that depend therefrom, are patentably distinct over the art of record.

The Examiner rejected claims 12-18 under 35 U.S.C. §103(a) over Earl et al. in view of Shih. Applicant has amended claim 12 to further define that which is called for therein.

As amended, claim 12 calls for, in part, a plurality of fins extending from the base between the pair of external portions and extending a length greater than the length of the external portions. As shown in Fig. 3 of Shih, the external portions of heat sink (3) extend from the base of the heat sink a length greater than the plurality of fins positioned therebetween. Such a construction allows heat sink (2) to be connected thereto. If the plurality of fins between the external portions of heat sink (3) was to extend beyond the external portions thereof, heat sink (2) would not connect thereto. As such, not only is that which is called for in claim 12 not taught, shown, or disclosed in the art of record, but such a construction would render Shih unsuitable for its intended purpose because it would prevent the heat sink components of the heat sink assembly from connecting. Accordingly, at least for the reasons set forth above, Applicant believes claim 12, and those claims that depend therefrom, are patentably distinct over the art of record.

The Examiner also rejected claims 19-25 under 35 U.S.C. §103(a) over Earl et al. in view of Shih. As amended, claim 19 calls for, in part, a heat sink having a first end fin, a second end fin, and a plurality of intermediate fins extending from the base between the first end fin and second end fin beyond the first end fin and the second end fin. As previously argued with respect

Sigl et al.

S/N: 10/604,252

to claim 12, and as shown in Fig. 3 of Shih, the plurality of intermediate fins (31) of heat sink (3) does not extend from the base beyond the first end fin and the second end fin. Additionally, such a construction would prevent heat sink (2) from engaging therewith. That is, upright fins (31) would engage the base of heat sink (2) and prevent coupling flange (24) of heat sink (2) from engaging positioning groove (34) of heat sink (3). That is, such a construction would prevent the connection of heat sink (2) with heat sink (3) and render the heat sink of Shih unsuitable for its intended purpose. As such, not only is a heat sink assembly as called for in claim 19 not shown or disclosed in the art of record, there is no motivation to combine the references as done by the Examiner because such a combination renders the prior art unsuitable for its intended purpose, i.e. a connectable heat sink assembly. Accordingly, Applicant believes claim 19, and those claims that depend therefrom, are patentably distinct thereover.

Applicant has also amended claims 8, 13, 14, 15, 17, 18, and 24 to comport with the amendments to the claims from which these claims depend, respectively. No new matter has been added.

Accordingly, at least for the reasons set forth above, Applicant believes that which is called for in claims 1-25 is patentably distinct over the art of record. Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-25.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,



Kirk L. Deheck
Registration No. 55,782
Direct Dial 262-376-5170 ext. 16
kld@zpspatents.com

Dated: June 10, 2005
Attorney Docket No.: ITW7510.070

P.O. ADDRESS:
Ziolkowski Patent Solutions Group, SC
14135 North Cedarburg Road
Mequon, WI 53097-1416
262-376-5170